

Appendix H. Post-Construction Nest Reports



NATURAL RESOURCES ♦ SCIENTIFIC SOLUTIONS

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TECHNICAL MEMORANDUM

DATE: November 1, 2013

TO: PACIFICORP

FROM: WEST, Inc.

RE: Glenrock & Rolling Hills – Raptor Nest Memo 2013

The following memorandum (memo) presents findings of raptor nest surveys completed at the Glenrock & Rolling Hills Wind Energy Facilities (GRH) in 2013. Ground surveys to determine eagle nest occupancy were initiated in April 2013. An aerial raptor nest survey was conducted on May 7, 2013, with follow-up ground surveys completed on May 23 and 28, June 4, and July 2.

Raptor Nest Surveys

Based on guidelines provided by the USFWS, nests were classified as occupied or unoccupied and active or inactive. Nests were classified as *Occupied* when indicators of use (e.g., bird present, feathers, whitewash) were observed. Nests were classified as *Active* when indications of nesting activity were observed (e.g., bird on nest, eggs, or chicks). The nest did not have to be successful to be designated as Active. The objective of initial ground surveys was to determine occupancy for eagle nests. An aerial raptor nest survey was also performed to identify nesting activity for all raptor and owl nests that are within the GRH and approximate 2-mile turbine buffer (Figure 1).

Initial occupation surveys were completed regularly throughout April. Due to the number of WEST observers present daily at GRH, occupation checks were completed in conjunction with eagle observation surveys. Occupation surveys targeted known eagle nests which have been identified as occupied in previous years. Aerial surveys were conducted from a helicopter on May 7, 2013. Aerial surveys were originally planned for late-April; however, inclement weather required surveys to be postponed. Results from previous surveys were utilized to identify

known nest locations. Raptor nest databases received from the BLM were also utilized to identify historic nest sites. Additional nest searches and follow up checks were completed in late May and early June. The follow up checks targeted golden eagle and ferruginous hawk nests identified as active during the aerial survey and determined nest success. The additional checks were completed because onsite observers noted regular golden eagle activity east and west of the project area in ponderosa habitat. Observers searched the identified areas for new nest structures. A final check was completed in early July to verify fledge success.

Three golden eagle nests and two ferruginous hawk nests were occupied during the 2013 nesting season (Figure 1). Golden eagle use, fresh greenery, or white wash was noted at each nest site. One golden eagle nest was active during the 2013 nesting season. The golden eagle nest successfully produced one offspring. During the fledge success check the golden eagle chick was observed dead in the nest. One ferruginous hawk nest was active during the 2013 nesting season. A follow up nest success check determined the nest was unsuccessful likely due to predation.

Searches for new golden eagle nest sites did not identify new nests. Observers did note golden eagle use and mute in the searched areas. The sites are potentially common perch locations. These areas will be re-surveyed in 2014 for potential new nests. The golden eagle nest located north and east of the project area was not active in 2013. The road adjacent to the nest receives substantial use due to ranching and oil/gas development. Since monitoring began oil/gas activities have increased, including a new pump jack and water tanks less than 0.5 miles to the nest. The direct effects to the nest are unknown; however, the nest has not been occupied/active and successful since 2011 (2012 – occupied/active; unsuccessful).



Figure 1. 2013 Raptor Nest Survey Results at the Glenrock & Rolling Hills Wind Energy Facilities.



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TECHNICAL MEMORANDUM

DATE: December 11, 2014

TO: PACIFICORP

FROM: WEST, Inc.

RE: Glenrock & Rolling Hills – Raptor Nest Memo 2014

The following memorandum (memo) presents findings of the 2014 aerial raptor nest surveys completed at the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF). Informal nest surveys were conducted in March by onsite technicians to determine occupancy. Aerial (helicopter) raptor nest surveys were conducted on April 6 and May 6, 2014. Follow up ground surveys were completed throughout the summer. The survey area was defined as a 2.5 mile buffer from project turbines (Figure 1).

Raptor Nest Surveys

The USFWS drafted the *Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy (Version 2; 2013)*. In this document the following definitions are provided (note: no definition is provided for Active nest, only a reference to Occupied nest):

Occupied nest – a nest used for breeding in the current year by a pair of eagles. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current year's mutes (whitewash) suggest site occupancy. In years when food resources are scarce, it is not uncommon for a pair of eagles to occupy a nest yet never lay eggs; such nests are considered occupied.

Unoccupied nest – those nests not selected by raptors for use in the current nesting season. See also inactive nest.

Inactive nest – a bald eagle or golden eagle nest that is not currently being used by eagles as determined by the continuing absence of any adult, egg, or dependent young at the nest for at

least 10 consecutive days immediately prior to, and including, at present. An inactive nest may become active again and remains protected under the Eagle Act.

The Region 6 USFWS has provided further guidance in the *Region 6 Recommendations for Avoidance and Minimization of Impacts to Golden Eagles at Wind Energy Facilities*, April 11, 2013:

An occupied nest is a nest used for breeding in the current year by a pair of eagles. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current year's mutes (whitewash) suggest site occupancy. In years when food resources are scarce, it is not uncommon for a pair of eagles to occupy a nest yet never lay eggs; such nests are considered occupied (Eagle Conservation Plan Guidance [ECPG1] 2012, p. 32). For purposes of these recommendations, we define occupied GOEA nests as nest sites that were occupied at least once during the last five years or last five years of field surveys. Because GOEAs will often use the same nest in multiple years (Kochert and Steenhof 2012), there is a high likelihood that these nests could be occupied again during the life of the project. Nests form the center of activity during the breeding season and are often centers of activity during the non-breeding season as well (Marzluff et al. 1997). Buffering or otherwise protecting eagle nests should substantially decrease the probability of lethal take, as well as disturbance take, of eagles. Other raptors using the same nesting habitats as GOEA (e.g., prairie falcon) will also benefit from protection of GOEA nest sites.

We define unoccupied GOEA nests as those nests not selected by raptors for use in the current nesting season (ECPG 2012, p. 33). For purposes of these recommendations, we define unoccupied GOEA nests as nest sites that were not occupied during the last five years or last five years of field surveys. It should be noted that occupied nests can be incorrectly assigned as unoccupied if the nests are not repeatedly surveyed during the same nesting season. Even if a nest was unoccupied in one or more years, it is still possible that eagles could reuse that nest in future years (Kochert and Steenhof 2012), especially since the intervals between nest reuse can be lengthy (Kochert and Steenhof 2012, Slater et al. 2013). Given that the anticipated life of a wind project is 30 years (though repowering could extend that indefinitely) it is likely that some unoccupied nests will become occupied during the life of the project. In addition, nests usually occur in areas of historical eagle use (due to topographic features and prey resources) and represent areas where eagles are expected to return in the future.

Based on guidance provided by the USFWS, 2014 golden eagle nests at GRHWEF were classified as occupied – active or occupied – inactive. Follow up nest surveys were completed, as access allowed, to determine fledge success. Nests were named by the Township, Range, Section and unique nest ID for each section (e.g., Township 35, Range 75, Section 8, Nest 1 = 35750801).

Golden Eagles

Five occupied – active golden eagle nests were identified during the 2014 raptor nest surveys (31742901, 36750501, 36751701, 35750801, and 35752101; Figure 1). All five nests had an adult golden eagle on the nest, in an incubating posture and/or eggs observed during the first

round of surveys. Additionally, two nests (36741801 and 35740601) were identified as occupied – inactive during the first round of nest surveys. These nests did not have a golden eagle on the nest in an incubating posture; however, early season surveys (March 2014) identified a pair of adult golden eagles present in the nest trees. During the second round of surveys, two golden eagle nests (31742901 and 35750801) had a single chick, while the remaining three nests had an adult incubating. Follow up ground surveys identified two chicks at nest 35752101. No chicks were identified at nest 36751701. Access to nest 36750501 was not authorized; therefore, follow up surveys were not conducted. In total, five golden eagle nests were active in 2014 and three of these nests successfully fledged four chicks.

Table 1 lists the turbine closest to each golden eagle nest and the distance to that turbine.

Table 1. GRH 2014 Golden Eagle Nests and Turbine Distance

Nest ID	Closest Turbine	Distance to Closest Turbine (miles)
31742901	GR1-101	2.98
36741801	GR1-101	1.13
36750501	RH1-113	1.98
36751701	RH1-205	1.18
35740601	GR3-601	0.66
35750801	RH1-512	2.09
35752101	RH1-614	2.30

Other Raptors

One great-horned owl was observed incubating during the first round of aerial surveys. No other raptors were observed during round 1. Five active red-tailed hawk nests and two active ferruginous hawk nests were identified during round 2 aerial surveys. A ground survey identified an additional ferruginous hawk nest (35752601). The red-tailed hawk nests were not monitored further. Follow up surveys at the ferruginous hawk nests identified two chicks at nest 37753501, three chicks at nest 35751601, and two chicks at nest 35752601. In total, three ferruginous hawk nests were active in 2014 and successfully fledged seven chicks.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2014, WEST monitored the platforms for nesting activity (June 2, 2014). An occupied-active ferruginous hawk nest was observed on the west platform. A large robust nest was observed on the east platform; however, no active nesting indicators (i.e., raptors, molted feathers, mute, etc.) were recorded. A small remnant nest was observed on the middle platform. No active nesting indicators were observed.

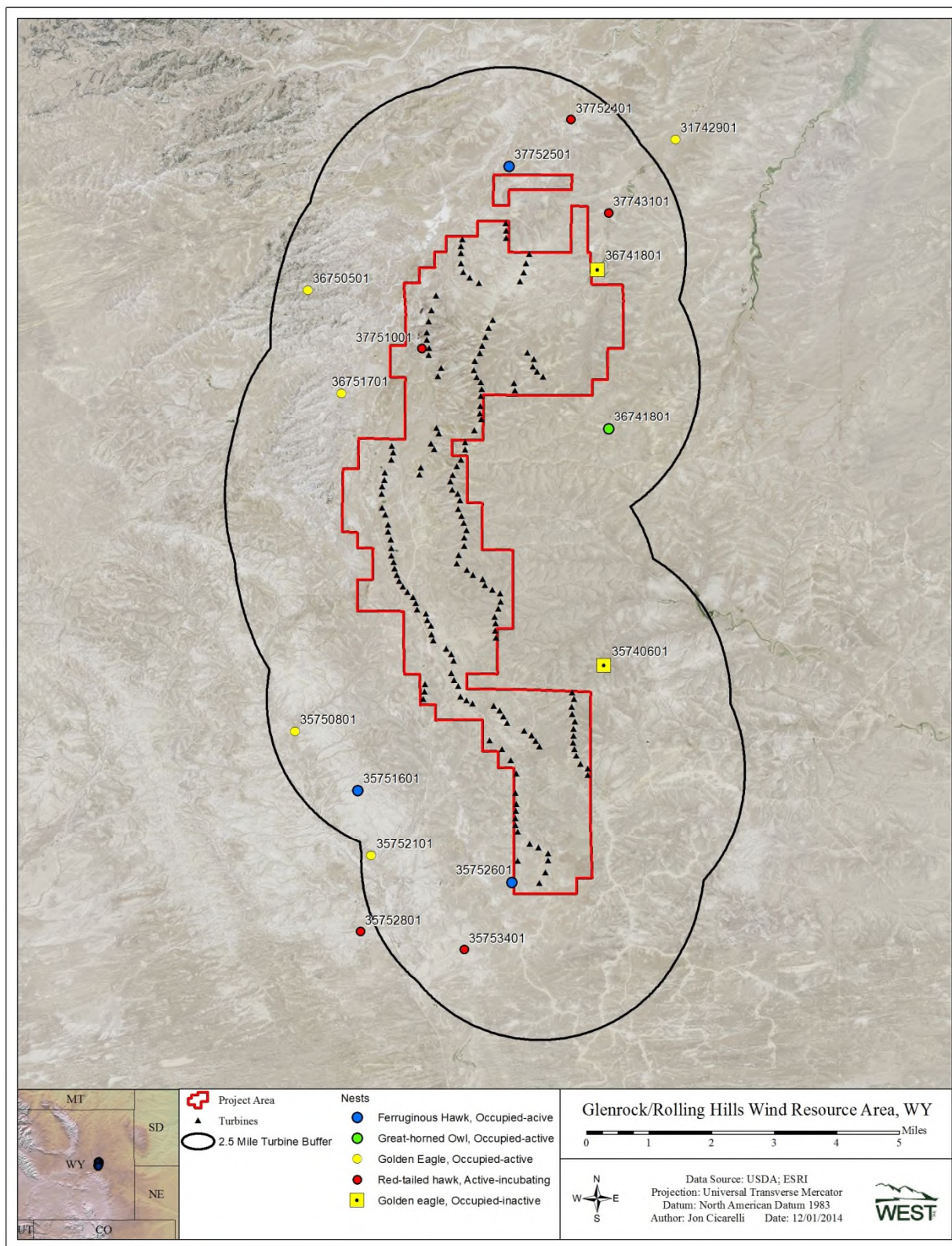


Figure 1. GRHWEF – 2014 Nest Surveys



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TECHNICAL MEMORANDUM

DATE: October 28, 2015

TO: PACIFICORP

FROM: WEST, Inc.

RE: Glenrock & Rolling Hills – Raptor Nest Memo 2015

The following memorandum (memo) presents findings of the 2015 raptor nest surveys completed at the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF). Two rounds of aerial (helicopter) raptor nest surveys and follow up ground surveys were completed during the 2015 nesting season. The survey area was defined as a 2.5 mile buffer from project turbines (Figure 1).

Raptor Nest Survey

Methods

The raptor nest surveys followed the guidelines provided below. PacifiCorp discussed the methods with the USFWS prior to implementation. The surveys methods included multiple ground and aerial surveys. The objectives of the surveys were to identify potentially occupied eagle nests, track nest status throughout the nesting season, and ultimately determine nest success.

January 1 – mid-February: Informal checks were completed to verify potential territory occupation at known eagle nest locations. A nest territory was considered potentially occupied if a pair of adults was observed in the general vicinity of the nest location. These checks were completed in coordination with other site activities (i.e., search efforts or curtailment).

Mid-February – late-March: The first round of aerial surveys was conducted on March 2, 2015 from a helicopter. The goal of the survey was to document all eagle nests (potentially new and historic) and determine if the nests were occupied. Known owl nests were targeted during this survey. One qualified WEST biologist and the helicopter pilot flew the survey area (2.5-mile turbine buffer; Figure 1). Known nest data included previous WEST survey data and BLM nest data. Features within the survey area where nests were likely to occur (e.g., rocky outcrops, trees, man-made structures) were investigated for potential new nests.

Late-March – April: Ground checks were completed at occupied eagle nests (based on the results of the previous surveys) where access was authorized. The goal of this survey was to identify occupied eagle nests with incubating adults. Ferruginous hawk nests (historic) were also surveyed during this effort to verify potential occupied nest status. Surveys were triggered by the presence of an incubating adult at a highly visible nest (e.g., eagle nest visible from public road).

May: The second round of aerial surveys was conducted from a helicopter on May 17, 2015. The goal of this survey was to identify chicks at occupied eagle nests (based on previous surveys) and the status of ferruginous hawk nests (assume incubating adults with eggs or chicks). This survey was conducted at least 60-days after the first aerial survey. Only eagle nests where an incubating adult was observed (unless property access did not allow a March-April check) were checked. All ferruginous hawk nests (historic and potentially new) were checked. Other raptor species were checked during this aerial survey and the nest status (i.e., incubating adult, eggs, chicks) were documented.

June – August: Ground checks were completed at eagle and ferruginous hawk nests that remained active (i.e., eggs or chicks) during previous surveys where access was authorized. The goal of this survey was to identify eagle and ferruginous hawk fledge success. Surveys were triggered by the fledge confirmation at a highly visible nest (e.g. eagle or ferruginous hawk nest visible from a public road).

Nests were named by the Township, Range, Section and a unique nest ID for each section (e.g., Township 23, Range 80, Section 29, Nest 1 = 23802901). Nest IDs remained the same for nests identified in 2014.

Results

The 2015 raptor nest survey results at GRHWEF are provided below (Table 1):

January 1 – mid-February (informal observations during other site activities): Adult golden eagle pairs were observed at nests 35752101 and 35740601. Eagle activity was also observed near nests 35750801, 36751701, and 36750501 (based on observations from closest public road). No activity was observed in 2015 at golden eagle nest 36740601.

Mid-February – late-March (aerial survey on 3/2/15): Two adult golden eagles were observed at nest 31742901 (nest beyond the 2.5-mile survey limits). Two adult golden eagles flushed from nest 36750401. This was a new nest in 2015, potentially an alternate to nest 36750501. No

golden eagle activity was observed in 2015 at nest 36750501. No golden eagle activity was observed in 2015 at nest 36751701. This nest was successful in 2014. Two adult golden eagles were observed in the tree at nest 36741801. This was a great-horned owl nest in 2014. One adult golden eagle was observed in the tree at nest 35750801. One adult golden eagle was observed on nest 35740601 and a second adult golden eagle was observed in the vicinity. One adult golden eagle was observed standing on nest 35752101. Two adult golden eagles were observed in the tree of nest 35752802. This nest was previously documented as a red-tailed hawk nest. This nest is beyond the 2.5-mile survey area.

Late-March – April (ground surveys 4/1/15; 4/16/15): An adult golden eagle was observed incubating on nests 35752101, 35740601, and 36741801. All other golden eagle nests were either beyond the 2.5-mile survey area (35752802 and 31742901) or access was not authorized by the land owner (35750801, 36751701, 36750501, and 36750401). A pair of ferruginous hawks was observed near nests 37752501 and 35752601.

May (aerial survey on 5/17/15): At least one golden eagle chick was observed in nests 31742901 and 35752802. Two golden eagle chicks were observed in nests 36750401, 35740601, and 35752101. No golden eagle activity was observed at the previously occupied golden eagle nests 35750801 and 36741801. It is assumed that these nests failed. Four eggs were observed in the ferruginous hawk nests 37752501 and 35751601. An incubating ferruginous hawk was observed at nests 37752801 and 35752601. Red-tailed hawks were observed incubating on nests 37752401, 37743101, 36751101, and 37751001.

June – August (ground surveys on 6/9/15; 6/23/15; 7/11/15; 7/20/15): Two golden eagle fledglings were observed at nest 35752101. One golden eagle fledgling was observed at nest 35740601. It is unknown if the second chick fledged from this nest. No ferruginous hawk activity was observed at nest 35753601 or 37752501. Additional red-tailed hawk nesting activity was observed at the nests 36751501 and 36753401.

Due to access restrictions and defined survey boundaries, fledge success/failure at golden eagle nests with confirmed chicks (31742901, 36750401, and 35752802) and ferruginous hawk nests with incubating adults (37752801 and 35751601) could not be confirmed.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2015, WEST monitored the platforms for nesting activity (April 20, 2015). A ferruginous hawk was observed incubating on both the west and middle platforms. A red-tailed hawk was observed incubating on the east platform. Follow up surveys were not complete at the platforms.

Summary

In total, seven golden eagle nests were assumed to be occupied in 2015 (Table 1). Two of the golden eagle nests successfully fledged young (nest 35752101 – 2 young, nest 35740601 – 1 young). Three additional golden eagle nests had chicks observed; however, fledge success could not be confirmed due to access restrictions. No ferruginous hawk nests were successful in 2015; however, two ferruginous hawk nests (35751601 and 37752801) could not be surveyed beyond the May aerial survey. Additionally, six red-tailed hawk nests were identified as active.

Table 1. Glenrock and Rolling Hills 2015 Golden Eagle Nest Summary

Nest ID	Occupied	Successful	Comments
31742901	Yes	Unknown	1 chick observed, fledge success not confirmed; outside defined survey area
36740601	No	No	Tree commonly used as a perch; however, formal nesting has not occurred in multiple years
36750501	Yes	No	Occupation assumed based on informal observation; appears that an alternate nest was used for nesting in 2015
36750401	Yes	Unknown	New nest in 2015; 2 chicks observed, fledge success not confirmed (access restriction)
36751701	Yes	No	Occupation assumed based on informal observations; no incubating adult observed
36741801	Yes	No	GHOW nest in 2014; incubating adult goea observed in 2015; no chicks observed, assumed nest failed
35740601	Yes	Yes	2 chicks observed during aerial survey; only one fledgling confirmed
35750801	Yes	No	Unable to confirm incubating adult (access restrictions); aerial flight did not observe chicks
35752101	Yes	Yes	Successfully fledged 2 young
35752802	Yes	Unknown	RTHA nest in 2014; one chick observed; success not confirmed; outside defined survey area

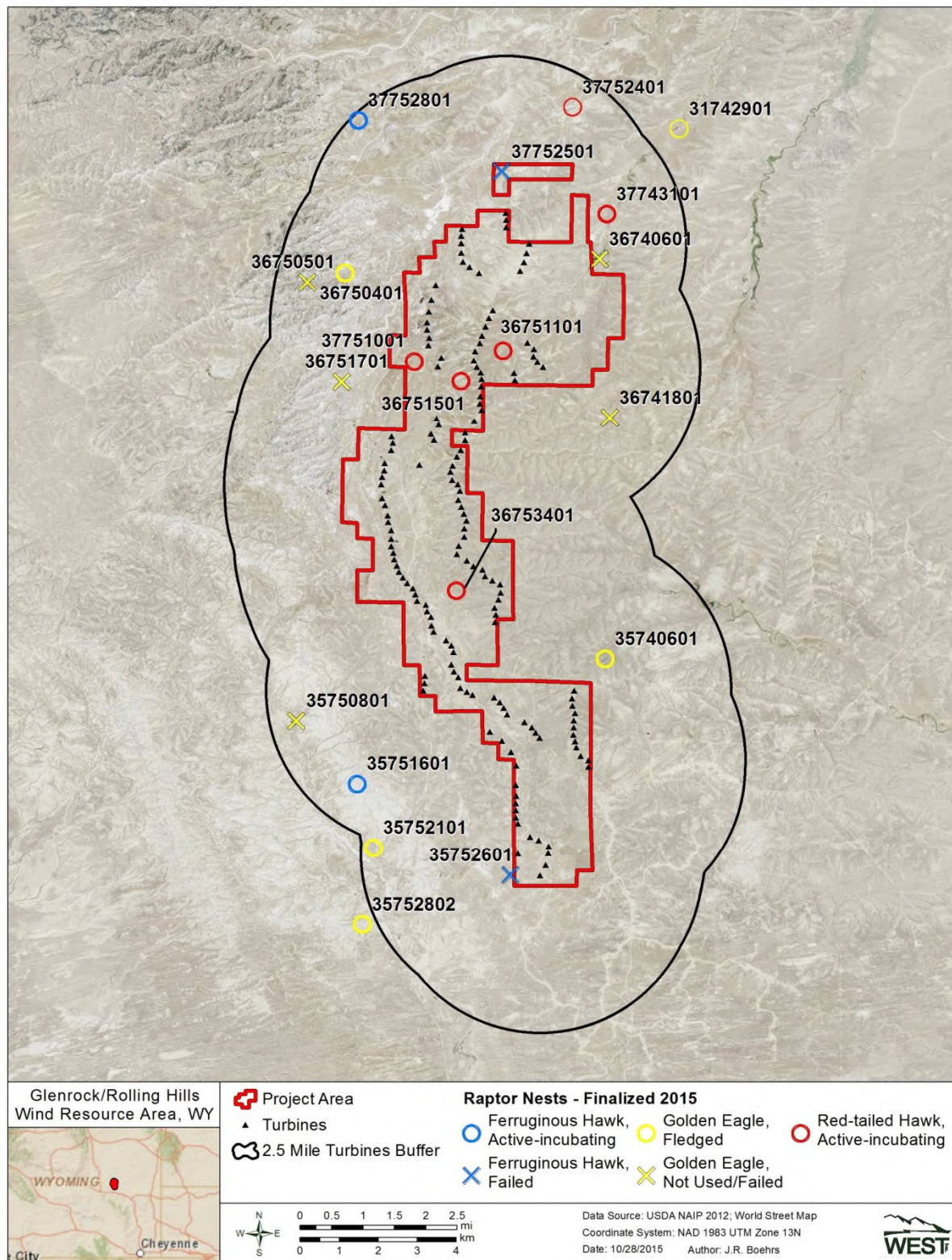


Figure 1. GRHWEF – 2015 Nest Surveys



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TECHNICAL MEMORANDUM

DATE: November 18, 2015

TO: PACIFICORP

FROM: WEST, Inc.

RE: Glenrock & Rolling Hills – Raptor Nest Memo 2016

The following memorandum (memo) presents findings of the 2016 raptor nest surveys completed at the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF). Two rounds of aerial (helicopter) raptor nest surveys and follow up ground surveys were completed during the 2016 nesting season. The survey area was defined as a 2.5 mile buffer from project turbines (Figure 1).

Raptor Nest Survey

Methods

The raptor nest surveys followed the guidelines provided below. PacifiCorp discussed the methods with the USFWS prior to implementation. The surveys methods included multiple ground and aerial surveys. The objectives of the surveys were to identify potentially occupied eagle nests, track nest status throughout the nesting season, and ultimately determine nest success.

January 1 – mid-February: Informal checks were completed to verify potential territory occupation at known eagle nest locations. A nest territory was considered potentially occupied if a pair of adults was observed in the general vicinity of the nest location. These checks were completed in coordination with other site activities (i.e., search efforts or curtailment).

Mid-February – late-March: The first round of aerial survey was conducted on February 28, 2016 from a helicopter. The goal of the survey was to document all eagle nests (potentially new and historic) and determine if the nests were occupied. Known owl nests were targeted during this survey. One WEST biologist and the helicopter pilot flew the survey area (2.5-mile turbine buffer; Figure 1). Known nest data included previous WEST survey data and BLM nest data. Features within the survey area where nests were likely to occur (e.g., rocky outcrops, trees, man-made structures) were investigated for potential new nests.

Late-March – April: Ground checks were completed at occupied eagle nests (based on the results of the previous surveys) where access was authorized. The goal of this survey was to identify occupied eagle nests with incubating adults. Ferruginous hawk nests (historic) were also surveyed during this effort to verify potential occupied nest status. Surveys were triggered by the presence of an incubating adult at a highly visible nest (e.g., eagle nest visible from public road).

May: The second round of aerial surveys was conducted from a helicopter on May 9, 2016. The goal of this survey was to identify chicks at occupied eagle nests (based on previous surveys) and the status of ferruginous hawk nests (assume incubating adults with eggs or chicks). This survey was conducted at least 60-days after the first aerial survey. Only eagle nests where an incubating adult was observed (unless property access did not allow a March-April check) were checked. All ferruginous hawk nests (historic and potentially new) were checked. Other raptor species were checked during this aerial survey and the nest status (i.e., incubating adult, eggs, chicks) were documented.

June – August: Ground checks were completed at eagle and ferruginous hawk nests that remained active (i.e., eggs or chicks) during previous surveys where access was authorized. The goal of this survey was to identify eagle and ferruginous hawk fledge success. Surveys were triggered by the fledge confirmation at a highly visible nest (e.g. eagle or ferruginous hawk nest visible from a public road).

Nests were named by the Township, Range, Section and a unique nest ID for each section (e.g., Township 23, Range 80, Section 29, Nest 1 = 23802901). Nest IDs were initiated in 2014 and remained the same for 2016.

Results

The 2016 raptor nest survey results at GRHWEF are provided below (Table 1):

January 1 – mid-February (informal observations during other site activities): Adult golden eagle pairs were observed at nests 35752101, 35740601, 36741801, and 36740601. Eagle activity was also observed near nests 35750801, 36750401, and 36750501 (based on observations from closest public road). No activity was observed near nest 36751701.

Mid-February – late-March (aerial survey on 2/28/16; ground survey 3/9/16): One adult golden eagle was observed near nests 35740601, 35750801, and 35752101. Three golden eagles were observed near nest 35752802. All of these nests had fresh greenery lining bowls. No

golden eagle activity or fresh greenery was observed at nests 36741801, 36740601, 31742901, 36750501, 36750401, or 36751701. Adult golden eagles were also observed near nests 37752501 and 35751601. These nests have been historically occupied by ferruginous hawks; therefore, it is likely observations were incidental. Ground checks that occurred on 3/9/16 identified incubating adult golden eagles at nests 35752101, 35740601, and 36741801. An adult golden eagle was observed at nest 36740601; however, nesting was not confirmed.

Late-March – April (ground surveys 4/4/16, 4/7/16, and 4/27/16): An adult was observed incubating at nests 35752101, 35740601, and 36741801. No golden eagle activity was observed at nest 36740601. Access was restricted to golden eagle nests 36750501, 36750401, 36751701, and 35750801. Additionally, golden eagle nests 31742901 and 35752802 are beyond the 2.5 mile survey buffer; therefore, access was not requested.

May (aerial survey on 5/9/16): Two chicks were observed at golden eagle nests 35752802, 35740601, and 36750501. One chick was observed at golden eagle nests 35750802 (new in 2016) and 31742901. An adult was observed incubating at golden eagle nests 35752101 and 36741801. No nesting activity was observed at golden eagle nests 35750801, 36751701, 36750401, and 36740601. Four ferruginous hawk nests (35753501, 35751601, 37752501, and 3575201) had incubating adults and one ferruginous hawk nest (35752301) had four eggs but no adults in the area. Three red-tailed hawk nests (37743101, 37752401, and 37752401) were also active in 2016. One unidentified hawk nest (37752501) was also active in 2016. Due to the position of the nest, a confident species identification could not be determined.

June – August (ground surveys on 6/2/16, 7/5/16, and 8/16/16): Golden eagle nests 35740601 and 36741801 successfully fledged two young. A dead fledgling was observed below golden eagle nest 35752101 (nest failed). Fledge success could not be confirmed at golden eagle nests 35752802, 35750802, 36750501, or 31742901. Ferruginous hawk nests 35753501 successfully fledged one young. Ferruginous hawk nests 35752301, 35752501, and 37752501 had nesting activity in previous checks; however, no chicks were confirmed during follow up checks. Access was restricted to ferruginous hawk nest 35751601; therefore, no follow up surveys were completed.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2016, WEST monitored the platforms for nesting activity (May 7, 2016). A ferruginous hawk was observed incubating on the west platform. Large stick nests were observed on the middle and east platform; however, no raptor nesting activity was observed in 2016. Follow up surveys were not complete at the platforms.

Summary

Ten golden eagle nests were assumed to be occupied in 2016 (Table 1). Two of the golden eagle nests successfully fledged young (nest 35740601 – two young; nest 36741801 – two young). Four additional golden eagle nests had chicks observed; however, fledge success could not be confirmed due to access restrictions. Golden eagle nest 35752101 produced one chick, but ultimately failed. One chick successfully fledged from ferruginous hawk nest 35753501; while access was restricted to nest 35751601. Additionally, three red-tailed hawk nests and one unidentified hawk nest were identified as active in 2016.

Table 1. Glenrock and Rolling Hills 2016 Golden Eagle Nest Summary

Nest ID	Occupied	Successful	Comments
31742901	Yes	Unknown	1 chick observed, fledge success not confirmed; outside defined survey area
36740601	Yes	No	Adult observed at nest, no nesting activity confirmed
36750501	Yes	Unknown	2 chicks observed, fledge success not confirmed (access restriction)
36750401	Yes	No	No nesting activity observed. Likely alternate nest to 36750501
36751701	No	No	No GOEA activity observed
36741801	Yes	Yes	2 young successfully fledged
35740601	Yes	Yes	2 young successfully fledged
35750801	Yes	No	GOEA observed in nest area during informal early season checks and 1 st round aerial flight. No nesting activity observed in subsequent checks. Potential alternate to new nest 35750802
35750802	Yes	Unknown	New nest in 2016; likely alternate to 35750801; 1 chick observed; fledge success not confirmed (access restriction).
35752101	Yes	No	One chick observed, found dead below tree during final check.
35752802	Yes	Unknown	2 chicks confirmed; outside defined survey area; no fledge confirmation

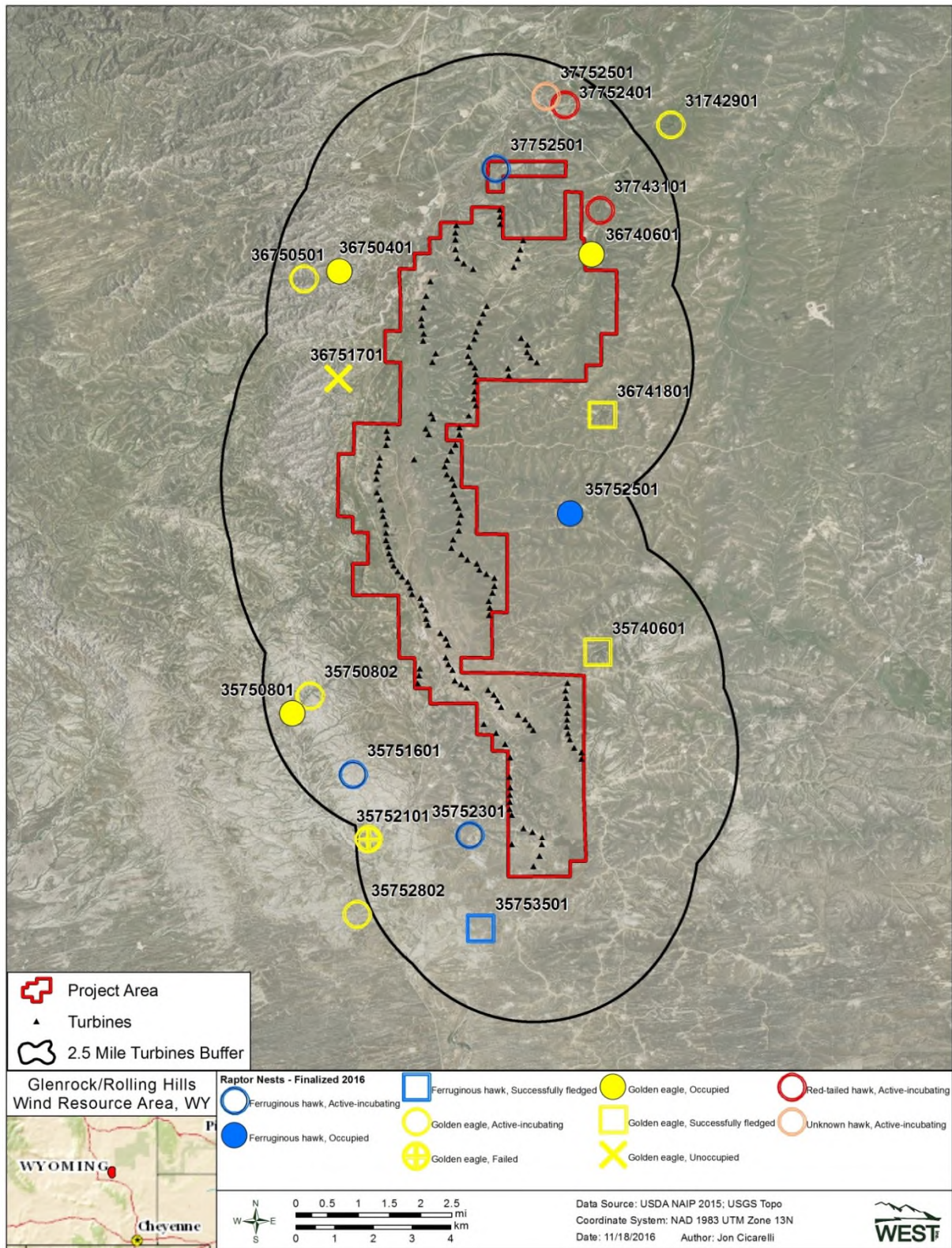


Figure 1. GRHWEF – 2016 Nest Surveys



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TECHNICAL MEMORANDUM

Date: November 30, 2017

To: Travis Brown; PacifiCorp

From: Luke Martinson and Jesse Hiler; WEST, Inc.

Subject: Glenrock and Rolling Hills – 2017 Raptor Nest Survey

Introduction

The following memorandum (memo) presents findings of the 2017 raptor nest surveys completed at the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF). Two rounds of aerial (helicopter) raptor nest surveys and follow up ground surveys were completed during the 2017 nesting season. The survey area was defined as a 2.5-mile buffer from project turbines (Figure 1).

Raptor Nest Survey

Methods

The raptor nest surveys followed the guidelines provided below. PacifiCorp discussed the methods with the USFWS prior to implementation. The surveys methods included multiple ground and aerial surveys. The objectives of the surveys were to identify potentially occupied eagle nests, track nest status throughout the nesting season, and ultimately determine nest success.

January 1 – mid-February: Informal checks were completed to verify potential territory occupation at known eagle nest locations. A nest territory was considered potentially occupied if a pair of adults was observed in the general vicinity of the nest location. These checks were completed in coordination with other site activities (i.e., search efforts or curtailment).

Mid-February – late-March: The first round of aerial survey was conducted on March 7, 2017 from a helicopter. The goal of the survey was to document all eagle nests (potentially new and historic) and determine if the nests were occupied. Known owl nests were targeted during this survey. One WEST biologist and the helicopter pilot flew the survey area (2.5-mile turbine buffer; Figure 1). Known nest data included previous WEST survey data and BLM nest data. Features within the survey area where nests were likely to occur (e.g., rocky outcrops, trees, man-made structures) were investigated for potential new nests.

Late-March – April: Ground checks were completed at occupied eagle nests (based on the results of the previous surveys) where access was authorized. The goal of this survey was to identify occupied eagle nests with incubating adults. Ferruginous hawk nests (historic) were also surveyed during this effort to verify potential occupied nest status. Surveys were triggered by the presence of an incubating adult at a highly visible nest (e.g., eagle nest visible from public road).

May: The second round of aerial surveys was conducted from a helicopter on May 12, 2017. The goal of this survey was to identify chicks at occupied eagle nests (based on previous surveys) and the status of ferruginous hawk nests (assume incubating adults with eggs or chicks). This survey was conducted at least 60 days after the first aerial survey. Only eagle nests where an incubating adult was observed (unless property access did not allow a March-April check) were checked. All accessible ferruginous hawk nests (historic and potentially new) were checked. Other raptor species were checked during this aerial survey and the nest status (i.e., incubating adult, eggs, chicks) were documented.

June – August: Ground checks were completed at eagle and ferruginous hawk nests that remained active (i.e., eggs or chicks) during previous surveys where access was authorized. The goal of this survey was to identify eagle and ferruginous hawk fledge success. Surveys were triggered by the fledge confirmation at a highly visible nest (e.g. eagle or ferruginous hawk nest visible from a public road).

Nests were named by the Township, Range, Section and a unique nest ID for each section (e.g., Township 23, Range 80, Section 29, Nest 1 = 23802901).

Results

The 2017 raptor nest survey results at GRHWEF are provided below (Table 1):

January 1 – mid-February (informal observations during other site activities): A pair of adult golden eagles was observed at nests 35750801 and 35752101. One adult golden eagle was observed at nest 36741801. No golden eagle activity was observed near nests 36740601 and 35740601. Due to the distance of other golden eagle nests from the Project, occupation could not be determined.

Mid-February – late-March (aerial survey 3/7/17; ground survey 3/8/17): An adult golden eagle was observed incubating at nests 36750501, 37742901, and 35740601. Nest 35750801 had one egg and an adult golden eagle nearby. One adult golden eagle and fresh greenery were

observed at nests 35752802 and 35752101. Two adult golden eagles were observed near nest 36741801, which also had fresh greenery. No golden eagle activity or fresh greenery were observed at nests 35750802, 36751701, 36750502, and 36740601. Ground checks that occurred on 3/8/17 identified one adult golden eagle near nest 35740601 and two adult golden eagles perched in and near nest 36741801. No golden eagle activity was observed at nests 35750802 or 36740601.

Late-March – April (ground survey 4/17/17): An adult golden eagle was observed incubating at nests 35750801 and 35740601. No golden eagle activity was observed at nests 37742901 or 36741801. Access was restricted to golden eagle nests 35752101 and 36750501. Additionally, golden eagle nest 35752802 is located beyond the 2.5 mile survey buffer; therefore, access was not requested.

May (aerial survey 5/12/17; ground surveys 5/9/17 and 5/15/17): Two chicks were observed at golden eagle nests 35752802, 35752101, 36740601, and 35740601. One chick was observed at golden eagle nests 35750801, 36750501, and 37742901. Two adult golden eagles were observed near nest 36741801. No golden eagle nesting activity was observed at nests 35750802 or 36750502. A red-tailed hawk was observed incubating at nest 36751701, which was an occupied golden eagle nest in 2014. One additional red-tailed hawk nest (37752401) had an incubating adult. Three ferruginous hawk nests (35751601, 36743101, and 37752501) had incubating adults, and one ferruginous hawk nest (35753501) had an adult soaring above the nest area. One Swainson's hawk nest (36743001) had adults tending the nest. One great horned owl nests (37743101) had two chicks and one nest (37752402) had an adult in the cavity.

June – August (ground surveys on 6/29/17, 6/30/17, 7/19/17, and 7/20/17): Golden eagle nest 36740601 successfully fledged two young. One successful fledgling was confirmed at golden eagle nest 35752101, which also had a fledgling carcass on the ground below the nest. No chicks or fledglings were observed at golden eagle nest 35740601 after the second aerial survey. Occupied golden eagle nest 36741801 was monitored through July, however, no eggs or chicks were observed during the 2017 nesting season. Fledge success could not be confirmed at golden eagle nests 35752802, 35750801, 36750501, or 37742901. No chicks were observed at ferruginous hawk nests 35753501, 37752501, and 36743101 during follow up checks. Access was restricted to ferruginous hawk nest 35751601; therefore, no follow up surveys were completed.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2017, WEST monitored the platforms for nesting activity (April 30, 2017). Ferruginous hawks were observed incubating on the west and middle platforms. A large stick nest was observed on

the east platform; however, no raptor nesting activity was observed in 2017. Follow up surveys were not completed at the platforms.

Summary

Eight golden eagle nests were assumed to be occupied and two were unoccupied in 2017 (Table 1). Two of the golden eagle nests successfully fledged young (nest 36740601 – two fledglings; nest 35752101 – one fledgling). Additionally, four golden eagle nests had chicks observed; however, fledge success could not be confirmed due to access restrictions. Golden eagle nest 35740601 produced two chicks, but ultimately failed. A red-tailed hawk was observed incubating in nest 36751701, which was an occupied golden eagle nest in 2014. Ferruginous hawks were observed incubating at nests 36743101, and 37752501; however, no chicks were observed during follow up surveys. Ferruginous hawk nest 35751601 had an incubating adult, but access was restricted to this nest and follow up surveys were not completed. Additionally, one red-tailed hawk nest, one Swainson's hawk nest, and two great horned owl nests were active in 2017.

Table 1. Glenrock and Rolling Hills 2017 Golden Eagle Nest Summary

Nest ID	Occupied	Successful	Comments
37742901	Yes	Unknown	One chick observed, fledge success not confirmed; outside defined survey area.
36740601	Yes	Yes	Two young successfully fledged.
36750502	No	N/A	No golden eagle activity observed.
36750501	Yes	Unknown	One chick observed, fledge success not confirmed (access restriction).
36741801	Yes	No	Golden eagle pair observed in nest area through 2 nd aerial survey; fresh greenery. No nesting activity observed during subsequent checks.
35740601	Yes	No	Two chicks observed during 2 nd aerial survey, no chicks observed during subsequent checks.
35750802	No	N/A	No golden eagle activity observed.
35750801	Yes	Unknown	One chick observed, fledge success not confirmed (access restriction).
35752101	Yes	Yes	Two chicks confirmed; one successfully fledged and one observed dead on ground below nest.
35752802	Yes	Unknown	Two chicks observed, fledge success not confirmed (access restriction).

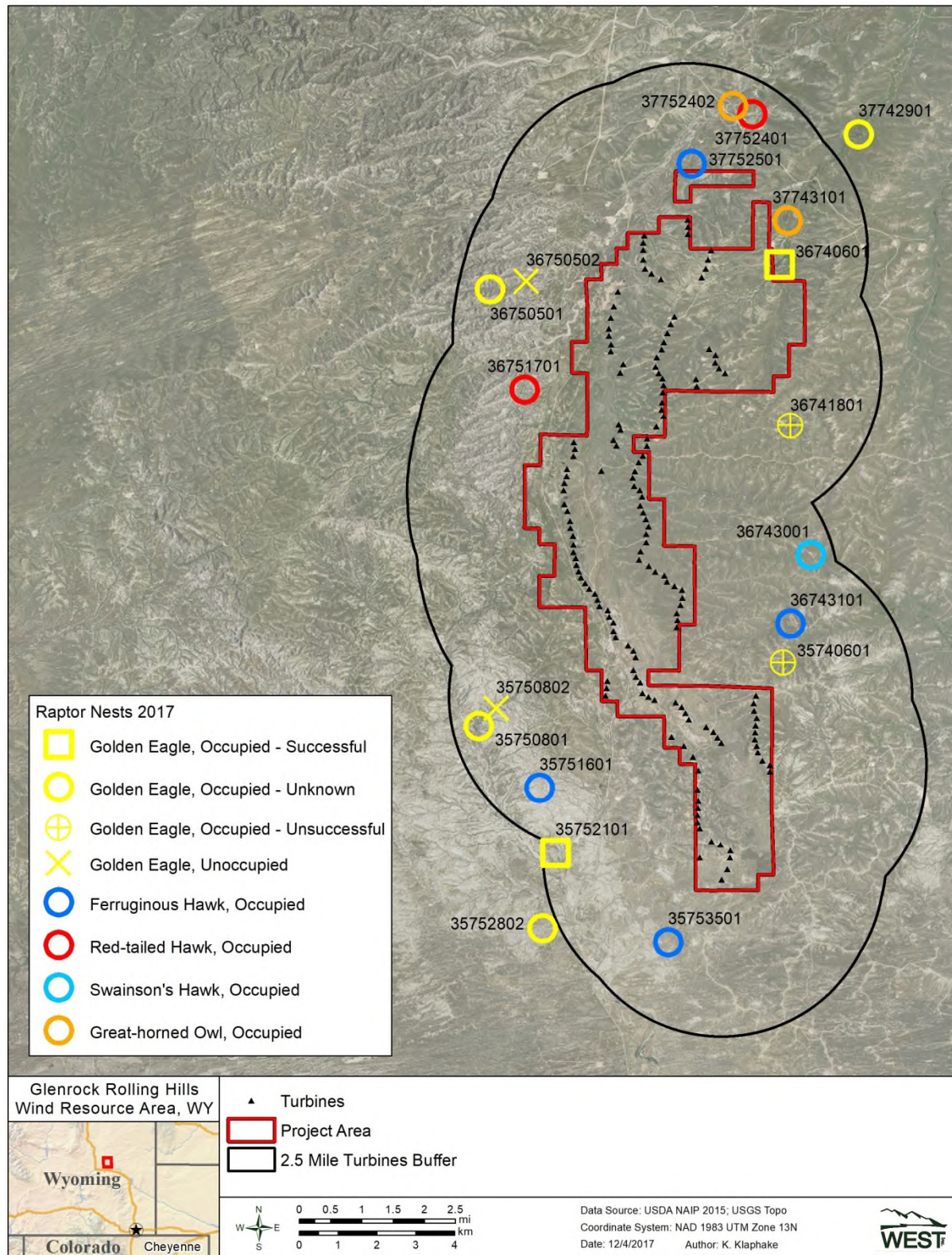


Figure 1. GRHWEF – 2017 Raptor Nest Survey



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TECHNICAL MEMORANDUM

Date: December 4, 2018

To: Travis Brown; PacifiCorp

From: Jesse Hiler and Luke Martinson; WEST, Inc.

Subject: Glenrock & Rolling Hills – 2018 Raptor Nest Survey

Introduction

PacifiCorp operates the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF or Project) located in Converse County, Wyoming. PacifiCorp contracted Western EcoSystems Technology, Inc. (WEST) to conduct raptor nest surveys at the GRHWEF during the 2018 nesting season. The survey protocol was developed in conjunction with the United States Fish and Wildlife Service (USFWS), WEST, and PacifiCorp. The survey area was defined as a 2.5-mile buffer of Project turbines. The following technical memorandum (memo) describes the methods and results of the 2018 raptor nest survey completed at the Project.

Raptor Nest Survey

Methods

The 2018 raptor nest survey was accomplished by conducting a series of aerial surveys and ground checks following the guidelines provided below. PacifiCorp discussed the methods with the USFWS and received approval prior to implementation. Surveys were conducted within a 2.5-mile buffer of turbines for raptors nests of all species (Figure 1). The primary objectives of the raptor nest surveys were to: 1) identify all eagle and ferruginous hawk (*Buteo regalis*) nests present in the defined survey area based on existing and publically available information; 2) locate potentially new eagle and ferruginous hawk nests during the current nesting season; 3) monitor the status of occupied eagle and ferruginous hawk nests throughout the nesting season (January 1 – August 31); and 4) determine the nest success and productivity for all occupied eagle nests. Survey efforts for other raptor species were limited to aerial surveys.

The following terms were defined to support the survey effort. Occupancy and Productivity determinations followed the guidance as outlined in the USFWS Eagle Conservation Plan (USFWS 2013) document:

“Occupied nest – a nest used for breeding in the current year by a pair. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current years’ mutes (whitewash) suggest site occupancy. In years when food resources are scarce, it is not uncommon for a pair of eagles to occupy a nest yet never lay eggs; such nests are considered occupied.”

“Productivity – the number of juveniles fledged from an occupied nest, often reported as a mean over the sample of nests.”

Nest survey schedules were modified based on weather and logistic issues. At least two nest checks were made to determine occupancy. If a nest was determined through the nest checks to be unoccupied as of April 1 (or May if not accessible on the ground), then there was no further monitoring of the nest during the current nesting season. Likewise, if a nest was deemed occupied in February or March, but an incubating adult was not documented prior to April 1, the nest was not included in the checks for chicks or fledge success. Aerial surveys checked all known (historic) and potentially new nests during the current nesting season. Ground surveys only occurred at known nests or nests deemed occupied during previous surveys, where property access was granted. These methods will apply to eagle and ferruginous hawk nests. The full nest survey schedule is provided below.

January 1 – mid-February: Informal ground checks were completed February 21, 2018 to verify potential occupation at known nest locations. A nest was considered potentially occupied if it met the definition provided above. These checks were completed in coordination with other site activities.

Mid-February – late-March: The first aerial survey was conducted from a helicopter March 15, 2018. The goal of this survey was to document all eagle nests (potentially new and historic) and determine if the nests were occupied. Ferruginous hawk nests were visited; however, based on the time of year, this species was not likely to be present. One qualified WEST biologist and the helicopter pilot flew the survey within the 2.5-mile turbine buffer. Known nest data included previous WEST survey data and BLM nest data. Features within the survey area where nests are likely to occur (e.g., rocky outcrops, trees, man-made structures) were investigated for potential new nests.

Late-March – April: Ground checks were completed April 5 – 7, 2018 at all eagle nests deemed occupied during previous surveys. The goal of this survey was to identify occupied eagle nests with incubating adults. Ferruginous hawks nests (historic) were also surveyed during this effort to verify nest status. Surveys were triggered by the presence of an incubating adult at a highly visible nest (e.g., eagle nest visible from public road). One check was completed at each occupied nest if access was available.

May: The second aerial survey was conducted from a helicopter May 9, 2018. The goal of this survey was to identify chicks at eagle nests where incubating adults or eggs were observed on previous surveys and to determine the status of ferruginous hawk nests. This survey was conducted approximately 60-days after the first aerial survey as allowed by weather and logistic issues. All known/historic raptor nest locations were visited during this survey.

June – August: Ground checks were completed June 29 and July 16, 2018 at eagle and ferruginous hawk nests that continued to be occupied and eggs or chicks were directly observed or assumed to be present during previous surveys. The goal of this survey was to identify eagle and ferruginous hawk fledge success. One or more checks was completed at each nest where chicks were present until fledge success was confirmed. Surveys were triggered by the fledge success confirmation at a highly visible nest (e.g. eagle or ferruginous hawk nest visible from a public road).

Nests were named by the Township, Range, Section and a unique nest ID for each section (e.g., Township 23, Range 80, Section 29, Nest 1 = 23802901).

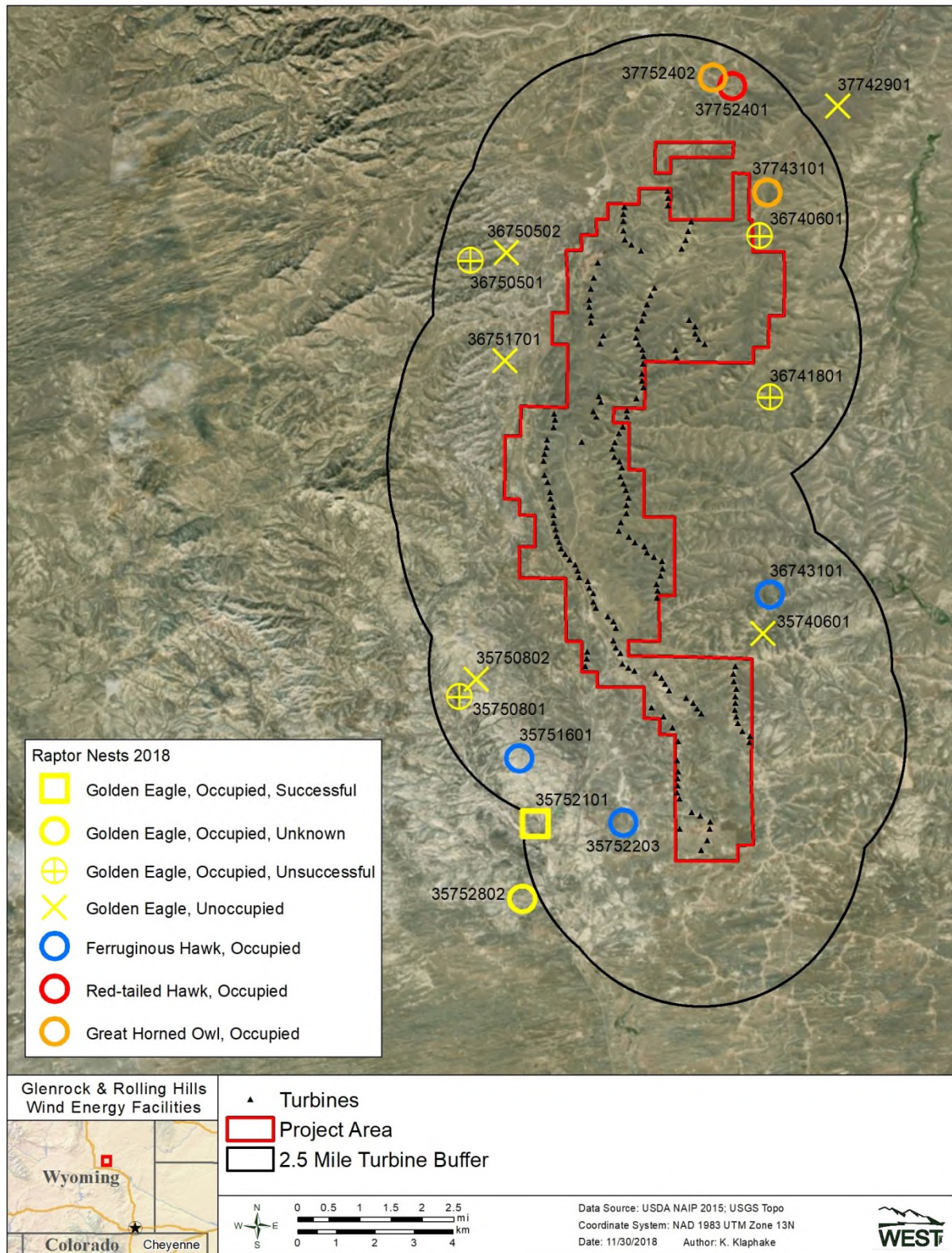


Figure 1. Results of the 2018 raptor nest survey conducted for the Glenrock & Rolling Hills Wind Energy Facilities located in Converse County, Wyoming.

Results

Six occupied golden eagle (*Aquila chrysaetos*) nests were identified during the 2018 raptor nest surveys conducted at the GRHWEF (Figure 1; Table 1). A final estimate of nest success and productivity was made at five of these nests (Table 1). Access was not available to conduct ground checks at nest 35752802; therefore, nest success and productivity was unknown. A total of 11 known/historic golden eagle nests were visited during aerial surveys, including two nests (35752802 and 37742901) located outside the survey area that have traditionally been included in surveys at the GRHWEF (Figure 1; Table 1). These nests were classified as follows for the 2018 nesting season: one occupied-successful, four occupied-unsuccessful, one occupied-unknown, and five unoccupied golden eagle nests (Table 1). Survey notes for all historic golden eagle nests are provided in Table 1.

Six occupied non-eagle raptor nests were observed within the 2.5-mile buffer in 2018 (Figure 1). These nests were assigned the following species for the 2018 nesting season: three ferruginous hawk nests, one red-tailed hawk (*Buteo jamaicensis*) nest, and two great horned owl (*Bubo virginianus*) nests (Figure 1). On June 29, 2018, an attempt was made to conduct ground checks at the three occupied ferruginous hawk nests (36743101, 35751601, and 35752203); however, access was restricted and fledge success could not be determined.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2018, WEST monitored the platforms for nesting activity (May 5, 2018). Ferruginous hawks were observed incubating on the west and middle platforms. A large stick nest was observed on the east platform; however, no raptor nesting activity was observed in 2018. Follow up surveys were not completed at the platforms.

Table 1. Glenrock & Rolling Hills Wind Energy Facilities 2018 eagle nest summary.

Nest ID	Species	Status	Determination of Success	Minimum # of Fledged Chicks	Survey Notes
37742901	Golden Eagle	Unoccupied	-	-	No activity 3/15/18 and 5/9/18; Outside defined survey area
36750501	Golden Eagle	Occupied	Unsuccessful	0	Adult tending, greenery in nest 3/15/18; No activity 5/9/18; No ground access
36750502	Golden Eagle	Unoccupied	-	-	No activity 3/15/18 and 5/9/18; Remnant nest, only a few sticks remaining in tree
36740601	Golden Eagle	Occupied	Unsuccessful	0	No activity 2/21/18 and 3/15/18; Two adults tending empty nest 5/9/18; Adult flushed from nest tree 6/29/18
36741801	Golden Eagle	Occupied	Unsuccessful	0	No activity 2/21/18 and 3/15/18; Adult incubating 4/5/18; No activity 5/9/18 and 6/29/18
36751701	Golden Eagle	Unoccupied	-	-	No activity 3/15/18 and 5/9/18; Occupied golden eagle in 2015 and red-tailed hawk in 2017
35750802	Golden Eagle	Unoccupied	-	-	No activity or sign of recent use 3/15/18 and 5/9/18
35752101	Golden Eagle	Occupied	Successful	2	Adult perched nearby 2/21/19; No activity 3/15/18; Adult incubating 4/5/18; Adult brooding 5/9/18; Two chicks, 7-8 weeks old 6/29/18; Two fledglings in nest tree 7/16/18
35750801	Golden Eagle	Occupied	Unsuccessful	0	Adult tending 3/15/18; No activity 5/9/18; No ground access
35752802	Golden Eagle	Occupied	Unknown	-	Adult tending 3/15/18; Two chicks, 1-2 weeks old 5/9/18; No ground access; Outside defined survey area
35740601	Golden Eagle	Unoccupied	-	-	No activity or sign of recent use 2/21/18, 3/15/18, 4/7/18, and 5/9/18

Summary

Six golden eagle nests were assumed to be occupied in 2018 (Table 1). This was less than the number of occupied golden eagle nests identified in 2017 (8) and 2016 (10). No bald eagle nests have been observed during raptor nest surveys at the GRHWEF. Golden eagle nest 35752101 successfully fledged two young in 2018. Two chicks were observed at golden eagle nest 35752802, which is located outside the 2.5-mile turbine buffer (Figure 1); however, fledge success could not be confirmed due to access restrictions. The remaining four occupied golden eagle nests were determined to be unsuccessful. This resulted in less than one fledgling per occupied golden eagle nest. Ferruginous hawks were observed incubating at nests 36743101, 35751601, and 35752203 during the second aerial survey; however, access was not available and ground checks were not completed. In addition, one red-tailed hawk nest had an incubating adult, and chicks were observed at two great horned owl nests in 2018.

References

US Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance: Module 1 - Land-Based Wind Energy, Version 2. US Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management. April 2013. Executive Summary and frontmatter + 103 pp. Available online at:
<https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>



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TECHNICAL MEMORANDUM

Date: November 12, 2019

To: Travis Brown; PacifiCorp

From: Jesse Hiler and Luke Martinson; WEST, Inc.

Subject: Glenrock & Rolling Hills – 2019 Raptor Nest Survey

Introduction

PacifiCorp operates the Glenrock & Rolling Hills Wind Energy Facilities (GRHWEF or Project) located in Converse County, Wyoming. PacifiCorp contracted Western EcoSystems Technology, Inc. (WEST) to conduct raptor nest surveys at the GRHWEF during the 2019 nesting season. The survey protocol was developed in conjunction with the United States Fish and Wildlife Service (USFWS), WEST, and PacifiCorp. The survey area was defined as a 2.5-mile buffer of Project turbines. The following technical memorandum (memo) describes the methods and results of the 2019 raptor nest survey completed at the Project.

Raptor Nest Survey

Methods

The 2019 raptor nest survey was accomplished by conducting a series of aerial surveys and ground checks following the guidelines provided below. PacifiCorp discussed the methods with the USFWS and received approval prior to implementation. Surveys were conducted within a 2.5-mile buffer of turbines for raptors nests of all species (Figure 1). The primary objectives of the raptor nest surveys were to: 1) identify all eagle and ferruginous hawk (*Buteo regalis*) nests present in the defined survey area based on existing and publically available information; 2) locate potentially new eagle and ferruginous hawk nests during the current nesting season; 3) monitor the status of occupied eagle and ferruginous hawk nests throughout the nesting season (January 1 – August 31); and 4) determine the nest success and productivity for all occupied eagle nests. Survey efforts for other raptor species were limited to aerial surveys.

Nests that fledged at least one juvenile were considered successful. Productivity is defined as the number of juveniles fledged from an occupied nest, and is often reported as a mean over the sample of nests. Occupancy determinations followed the guidance as outlined in the USFWS Eagle Conservation Plan (USFWS 2013) document:

“Occupied nest – a nest used for breeding in the current year by a pair. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current years’ mutes (whitewash) suggest site occupancy. In years when food resources are scarce, it is not uncommon for a pair of eagles to occupy a nest yet never lay eggs; such nests are considered occupied.”

Nest survey schedules were modified based on weather and logistic issues. At least two nest checks were made to determine occupancy. If a nest was determined, through the nest checks, to be unoccupied as of April 1 (or May if not accessible on the ground), then there was no further monitoring of the nest during the current nesting season. Likewise, if a nest was deemed occupied in February or March, but an incubating adult was not documented prior to April 1, the nest was not included in the checks for chicks or fledge success. Aerial surveys included visiting all known (historic) nest locations and searching for potential new nests. Ground surveys only occurred at known nests or nests deemed occupied during the current year’s surveys, where property access was granted. These methods will apply to eagle and ferruginous hawk nests. The full nest survey schedule is provided below.

January 1 – mid-February: Informal ground checks were completed February 21, 2019 to verify potential occupation at known nest locations. A nest was considered potentially occupied if it met the definition provided above. These checks were completed in coordination with other site activities.

Mid-February – late-March: The first aerial survey was conducted from a helicopter on March 24, 2019. The goal of this survey was to document all eagle nests (potentially new and historic) and determine if the nests were occupied. Ferruginous hawk nests were visited; however, based on the time of year, this species was not likely to be present. Two qualified WEST biologists and the helicopter pilot flew the survey within the 2.5-mile turbine buffer. Known nest data included previous WEST survey data and BLM nest data. Features within the survey area where nests are likely to occur (e.g., rocky outcrops, trees, man-made structures) were investigated for potential new nests.

Late-March – April: Ground checks were completed April 23 – 25, 2019 at all eagle nests deemed occupied during previous surveys. The goal of this survey was to identify occupied eagle nests with incubating adults. Ferruginous hawks nests (historic) were also surveyed during this effort to verify nest status. Surveys were triggered by the presence of an incubating adult at a highly visible nest (e.g., eagle nest visible from public road). One check was completed at each occupied nest if access was available.

May: The second aerial survey was conducted from a helicopter on May 12, 2019. The goal of this survey was to identify chicks at eagle nests where incubating adults or eggs were observed

on previous surveys and to determine the status of ferruginous hawk nests. This survey was conducted approximately 60-days after the first aerial survey as allowed by weather and logistic issues. While the protocol only required eagle nests to be checked a third time if an incubating adult or eggs were observed during previous checks; an attempt was made to visit all known nest locations during the aerial survey. All ferruginous hawk nests (historic and potentially new) were checked.

June – August: Ground checks were completed on June 21 and July 19, 2019 at eagle and ferruginous hawk nests that continued to be occupied and eggs or chicks were directly observed or assumed to be present during previous surveys. The goal of this survey was to identify eagle and ferruginous hawk fledge success. One or more checks were completed at each nest where chicks were present until fledge success was confirmed. Surveys were triggered by the fledge success confirmation at a highly visible nest (e.g. eagle or ferruginous hawk nest visible from a public road).

Nests were named by the Township, Range, Section and a unique nest ID for each section (e.g., Township 23, Range 80, Section 29, Nest 1 = 23802901).

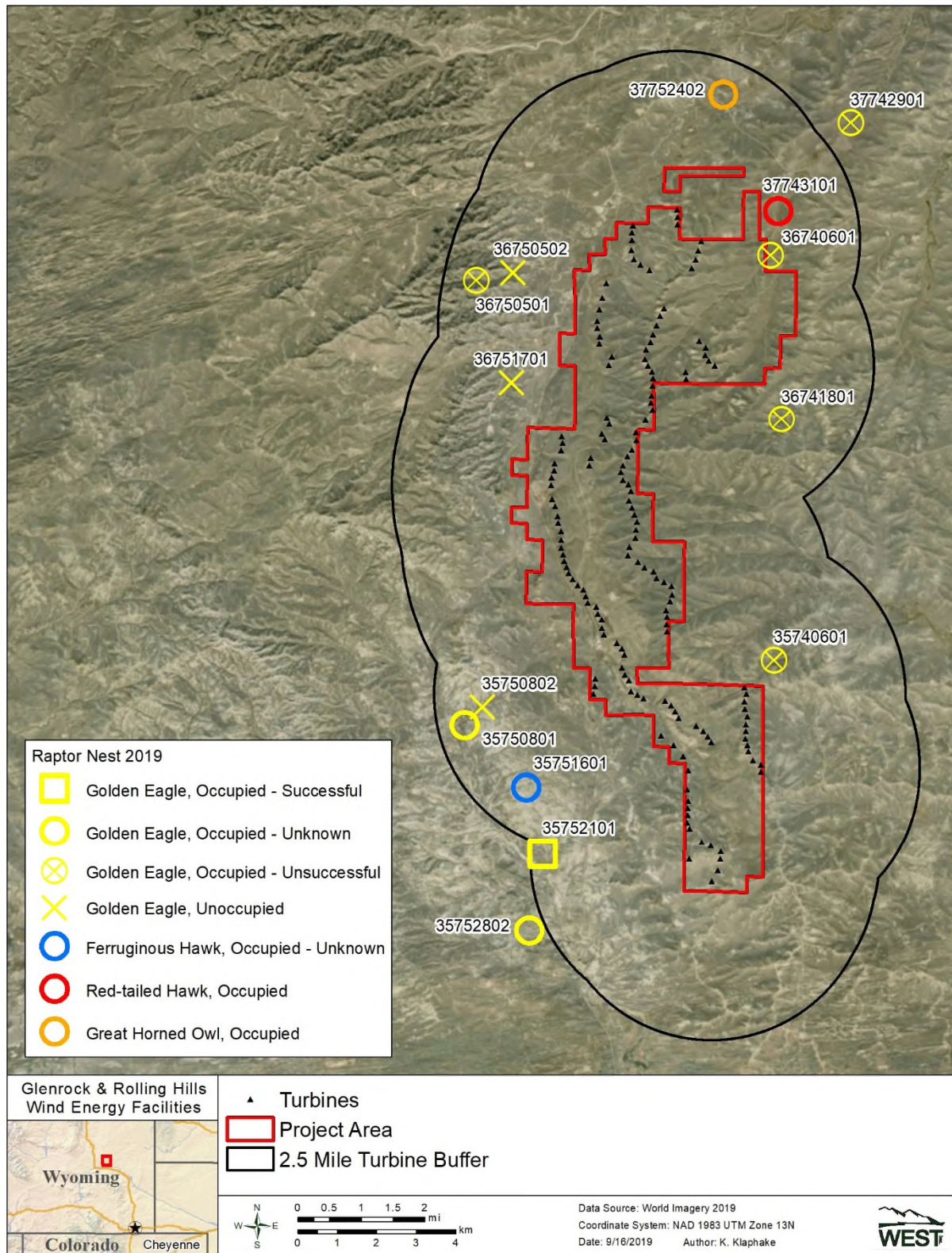


Figure 1. Results of the 2019 raptor nest survey conducted for the Glenrock & Rolling Hills Wind Energy Facilities located in Converse County, Wyoming.

Results

Eight occupied golden eagle (*Aquila chrysaetos*) nests were identified in 2019, including two nests located outside the 2.5-mile buffer that have traditionally been included in the GRHWEF surveys and results (Figure 1; Table 1). A final estimate of nest success and productivity was made at six of these nests (Table 1). Nest 35752101 successfully fledged one juvenile in 2019, while five nests were confirmed to be unsuccessful. Access was not available to conduct ground checks at the remaining two occupied golden eagle nests (35750801 and 35752802); therefore, nest success and productivity was unknown. One chick was observed at each of these nests during the second aerial survey conducted on May 12, 2019. Historic golden eagle nests 35750802, 36750502, and 36751701 were classified as unoccupied for the 2019 nesting season (Figure 1). Survey notes for all eagle nests are provided in Table 1.

Three occupied non-eagle raptor nests were observed within the survey area in 2019 (Figure 1). These nests were assigned the following species for the 2019 nesting season: one ferruginous hawk nest, one red-tailed hawk (*Buteo jamaicensis*) nest, and one great horned owl (*Bubo virginianus*) nest (Figure 1). During the aerial survey completed on May 12, 2019, an adult ferruginous hawk was observed incubating in nest 35751601, an adult red-tailed hawk was observed incubating in nest 37743101, and two great horned owl chicks were observed in nest 37752402. On June 21, 2019, an attempt was made to conduct a ground check at the occupied ferruginous hawk nest (35751601); however, access was restricted and fledge success could not be determined.

Platform Surveys

In 2008, PacifiCorp obtained a permit (MB174240-0) from the USFWS to relocate three platforms on which golden eagle nests had been established. The platforms were relocated approximately 10 miles to the south.

In 2019, WEST monitored the platforms for nesting activity (April 25, 2019). Ferruginous hawks were observed incubating on the west and middle platforms. A large stick nest was observed on the east platform; however, no raptor nesting activity was observed in 2019. Follow up surveys were not completed at the platforms.

Table 1. Glenrock & Rolling Hills Wind Energy Facilities 2019 eagle nest summary.

Nest ID	Species	Status	Determination of Success	Minimum # of Fledged Chicks	Survey Notes
35740601	Golden Eagle	Occupied	Unsuccessful	0	Two adults tending 3/24/19; Adult incubating/brooding 5/12/19; No adults or chicks observed 6/21/19 and 7/19/19
35750801	Golden Eagle	Occupied	Unknown	-	No activity 3/24/19; Adult and one chick, 1-2 weeks old 5/12/19; No ground access
35750802	Golden Eagle	Unoccupied	-	-	No sign of recent nesting activity 3/24/19 and 5/12/19; Fair condition
35752101	Golden Eagle	Occupied	Successful	1	Two adults tending 2/21/19; No activity 3/24/19; Incubating adult 4/25/19; Adult and one chick, one week old 5/12/19; One chick, six weeks old, adult perched above nest 6/21/19; Fledgling perched on ground, adult flying nearby 7/19/19
35752802	Golden Eagle	Occupied	Unknown	-	Two adults tending 3/24/19; Adult and one chick, one week old 5/12/19; No ground access; Outside defined survey area
36740601	Golden Eagle	Occupied	Unsuccessful	0	Two adults tending 3/24/19; No sign of recent nesting activity 4/23/19 and 5/12/19
36741801	Golden Eagle	Occupied	Unsuccessful	0	Two adults tending 3/24/19; No sign of recent nesting activity 4/23/19 and 5/12/19
36750501	Golden Eagle	Occupied	Unsuccessful	0	Two adults, greenery 3/24/19; No ground access; No sign of recent nesting activity 5/12/19
36750502	Golden Eagle	Unoccupied	-	-	No sign of recent nesting activity 3/24/19 and 5/12/19; Remnant nest, only a few sticks remaining in tree
36751701	Golden Eagle	Unoccupied	-	-	No sign of recent nesting activity 3/24/19 and 5/12/19; Poor condition, deteriorated significantly this year
37742901	Golden Eagle	Occupied	Unsuccessful	0	Adult tending 3/24/19; Adult incubating/brooding 5/12/19; Adult flushed from tree, no chicks observed 6/21/19; No sign of recent nesting activity 7/19/19; Outside defined survey area

Summary

Eight occupied golden eagle nests were identified during the 2019 raptor nest survey conducted at the GRHWEF (Figure 1; Table 1). This was two more than the number recorded in 2018 (6), and equal to the number recorded in 2017 (8). Golden eagle nest 35752101 successfully fledged one juvenile in 2019. Chicks were observed at golden eagle nests 35750801 and 35752802 during aerial surveys; however, fledge success could not be confirmed due to access restrictions. The remaining five occupied golden eagle nests were unsuccessful at fledging juveniles in 2019. No bald eagle nests have been observed during raptor nest surveys conducted at the GRHWEF. One occupied ferruginous hawk nest (35751601) was identified within the survey area in 2019; however, access was not available and ground checks were not completed (Figure 1). This was down from 2018, when three occupied ferruginous hawk nests were documented. In addition, one occupied red-tailed hawk nest and one occupied great horned owl nest were observed within the 2.5-mile turbine buffer in 2019 (Figure 1).

References

US Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance: Module 1 - Land-Based Wind Energy, Version 2. US Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management. April 2013. Executive Summary and frontmatter + 103 pp. Available online at:
<https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>